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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/08/2005

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EXAMINER

MURPHY, RHONDA L

ART UNIT PAPER NUMBER

2667

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/893,441	BERNHEIM ET AL.	
	Examiner	Art Unit	
	Rhonda Murphy	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18-31, 38-44 and 59-62 is/are rejected.
- 7) ☒ Claim(s) 17, 32-37 and 45-58 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This communication is responsive to the amendment filed on June 20, 2005. Accordingly, claims 1-62 are currently pending in this application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 8, 25, 26, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al. (US 5,748,611).

Regarding claims 1, 25 and 38, Allen teaches a hub (Fig. 1, E) comprising: an interface to the first computer network (the interface connection is inherent at hub E for connection to the first computer network 113); a plurality of primary communication link interfaces (the primary link interfaces at hub E for connection to nodes A and D, see Fig. 1); and a plurality of redundant communication link interfaces (the redundant link interfaces at hub E for connecting the redundant links shown as link 121); and providing a plurality of nodes (nodes A and D) geographically spaced apart from the hub, each one of said nodes comprising: an interface to at least one of the other computer networks (an interface at node A and D for connection to computer network 111 and 114, respectively); and a remote communication link interface (the interface for the link

connecting nodes A and D to hub E); establishing, for each node, at least one primary communication link between the remote communication link interface at the node and at least one of the plurality of primary communication link interfaces at the hub (the primary link is represented by link 120, illustrated in Fig. 1, between node A and hub E, and between node D and hub E; col. 5, lines 6-17); and establishing, for each node, at least one redundant communication link between the remote communication link interface at the node and at least one of the plurality of redundant communication link interfaces at the hub (the redundant link is represented by link 121, illustrated in Fig. 1, between node A and hub E, and between node D and hub E; col. 5, lines 6-17).

Although Allen teaches a wired computer network, it would be obvious to implement a computer network in a wireless environment for the purpose of utilizing mobile devices.

Furthermore, it would have been obvious to one skilled in the art to realize element 113 in Figure 1 can be utilized as a server workstation connecting multiple wireless devices/laptops, so as to form a computer network supporting multiple users.

Regarding claim 8, Allen teaches at least one of the primary communication link interfaces providing a substantially independent primary communication link to each of at least two nodes (Fig. 1; primary link 120, which inherently has a primary link interface, connects hub E to node A and hub E to node D. Thus, providing an independent primary link to each node).

Regarding claims 26 and 39, Allen teaches the number of primary communication link interfaces equaling the number of redundant communication link interfaces (see Fig. 1).

3. Claims 2, 3, 23, 27, 30, 40, 43, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al. (US 5,748,611).

Regarding claim 2, Allen teaches the limitations described above in the rejection of claim 1. Although Allen does not teach a second hub and second plurality of nodes, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify Allen's system to include a second hub and second plurality of nodes similar in structure and operation, for the purpose of providing redundancy through use of a second communication system.

Regarding claim 3, Allen teaches a broadband communication network (col. 4, lines 41-46) comprising a hub, nodes and computer networks. The computer networks are capable of transmitting data in bursts. Allen does not disclose the computer networks as being a part of a wireless communication system transmitting data in burst.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to incorporate Allen's broadband communication network into a broadband wireless communication network, for the purpose of transmitting data wirelessly throughout a network.

Regarding claims 23 and 61, Allen teaches a communication system comprising a computer network, but does not clearly state a computer network as a router. However, the computer network illustrated in Figure 1, suggests a router (111) for the purpose of connecting and routing data throughout the network.

Regarding claims 27 and 40, Allen teaches a plurality of primary communication link interfaces. Although Allen does not clearly state the primary link interfaces are

connected to a communication processor, it would have been obvious to have the primary link interfaces operatively connected to a unique one of a plurality of communication processors, in order to effectively transmit data from its source to its destination.

Regarding claim 30 and 43, Allen teaches primary and redundant communication link interfaces. It is known in the art that the number of primary communication link interfaces and the number of redundant communication link interfaces do not have to equal. Therefore, the number of primary communication link interfaces can be greater than the number of redundant communication link interfaces, which would allow the redundant link interface to handle traffic consistent with its bandwidth capacity.

4. Claims 4 – 7, 22 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen, in view of Stanwood et al. (US 6,731,946).

Regarding claims 4 and 5, Allen teaches a broadband communication system comprising primary communication links. Allen fails to disclose a primary communication link as being adaptive time division duplexed in the millimeter frequency range.

However, Stanwood teaches a broadband wireless communication system comprising primary links being adaptive time division duplexed and dynamically adjustable as a function of forward and reverse data traffic (col. 29, lines 7-16; an adaptive TDD system dynamically adjusts the number of time slots allocated to uplink

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and downlink times), in the millimeter frequency range (col. 9, lines 4-6; a system that transmits user data within the millimeter band at frequencies of approximately 28GHz).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to incorporate dynamically adjustable adaptive TDD in the millimeter frequency range, so as to provide the most efficient transfer of user data.

Regarding claims 6 and 7, the combined system of Allen and Stanwood teach the claimed limitations described in claims 4 and 5. Additionally, Allen teaches a system having redundant communication links. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the combined system of Allen and Stanwood, to include a redundant communication link that is adaptive time division duplexed in the millimeter range and dynamically adjustable, so as to provide the most efficient transfer of user data.

Regarding claims 22 and 60, Allen teaches a communication system comprising computer networks. Allen fails to teach a computer network as a private branch exchange.

However, Stanwood teaches a PBX (col. 27, lines 51-53). In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, incorporate a PBX into Allen's network, for the purpose of connecting to a private telephone system.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen, in view of Cinkler (US 6,628,618).

Regarding claim 9, Allen teaches a communication system with primary and redundant communication links. Allen fails to teach these links having the same capacity.

However, Cinkler teaches the traffic capacity of a secondary path equaling the traffic capacity of its primary path (col. 7, lines 29-33). Therefore, the secondary path interface and primary path interface share the same capacity as well.

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to provide equal capacity redundant and primary link interfaces, in order for the redundant link to sufficiently handle the data normally transmitted on the primary link.

6. Claims 10, 11, 16, 18 – 20, 28, 29, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen in view of Czerwiec et al. (US 2002/0044525).

Regarding claims 10, 11, 28, 29, 41 and 42, Allen teaches a plurality of primary communication link interfaces and redundant communication link interfaces.

Allen does not explicitly disclose the primary and redundant communication link interfaces being operatively connected to a first and second communication processor, respectively.

However, Czerwiec teaches primary and redundant communication link interfaces being operatively connected to a first and second communication processor (Fig. 4).

In view of this, it would have been obvious to one skilled in the art to modify Allen's system by including primary and redundant communication links to separate

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processors, for the purpose of providing redundancy to a second processor in the event the first processor fails.

Regarding claim 16, Allen teaches the communication system of claim 11 above.

Additionally, it would have been obvious to one skilled in the art to include a second redundant communication link interface at the hub wherein the second redundant communication link interface is operatively connected to a second communication processor, for the purpose of providing redundancy to a second processor in the event the first processor fails.

Regarding claims 18 - 20, Allen teaches the communication system comprising processors. Allen fails to teach the processors as modems capable of having multiple ports and capable of transmitting and receiving data at multiple levels of information density.

However, it is well known in the art that modems are utilized as communication processors for the purpose of modulating data into a form suitable for transmission. Thus, it would have been obvious to one skilled in the art to include such modems into Allen's system.

7. Claim 12 – 15, 31 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen in view of Kay et al. (US 2004/0246891).

Regarding claim 12, 31 and 44, Allen teaches primary and redundant link interfaces. Allen fails to teach the primary and redundant sector service areas.

However, Kay teaches a primary link interface associated with a primary sector of a service area (Fig. 1; page 3, paragraph 64 and 65; link 118 is associated with sector 116). Since Allen teaches both primary and redundant link interfaces and Kay teaches primary sectors, it would have been obvious to one skilled in the art to combine Allen and Kay's teachings, so as to provide both a primary sector service area and a redundant sector service area.

Regarding claim 13, the combined system of Allen and Kay teach primary and redundant sector service areas. Allen further teaches primary and redundant communication links in parallel to one another (col. 1, lines 28-30). Thus, it would be obvious for a redundant sector to be substantially coextensive with one or more of the primary sectors, since the redundant sector is in proximity to the primary sector, in order to handle data normally transmitted by the primary links during a failure.

Regarding claim 14, Allen teaches primary and redundant link interfaces. Allen fails to teach radio module interfaces.

However, Kay teaches radio module link interfaces (Fig. 1, element 112). In view of this, it would have been obvious to one having ordinary skill in the art, to include primary and redundant link radio module interfaces, for the purpose of wirelessly transmitting data between devices.

Regarding claim 15, the combined system of Allen and Kay teach radio modules interfaces. Kay further teaches radio modules adapted to facilitate rapid field replacement (page 6, paragraph 84; multiple modulation modes are advantageous in the microwave range, as channels in the range tend to rapidly degrade with distance

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during rain fades). Thus, it would have been obvious for the radio modules to adapt under such conditions, in order to efficiently transmit data on the air interface while maintaining signal integrity.

8. Claims 21, 24, 59, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen, in view of Feder et al. (US 6,512,754).

Regarding claims 21 and 59, Allen teaches a communication system comprising computer networks. Allen fails to teach a public switched telephone network.

However, Feder teaches a public switched telephone network (Fig. 1; col. 1, lines 23-25). In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to incorporate a PSTN into Allen's network, for the purpose of providing a telephone network.

Regarding claims 24 and 62, Allen teaches a communication system comprising computer networks. Allen fails to teach a computer network as the Internet.

However, Feder teaches an Internet (Fig. 2; col. 6, lines 7-10). In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to incorporate the Internet into Allen's network, for the purpose of providing access to a worldwide network of computer networks.

Allowable Subject Matter

1. Claims 17, 32-37 and 45-58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

2. Applicant's arguments with respect to claims 1-16, 18-31, 38-44, 59-62 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 8:00 - 4:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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Rhonda Murphy
Examiner
Art Unit 2667

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